

What is claimed is:

[Claim 1] 1. A battery holder mounting a battery to a printed circuit board having a positive contact and a negative contact, the battery holder comprising:

a resilient electrode plate disposed on the printed circuit board and electrically connected to the positive contact, wherein the battery has an anode electrically connected to the resilient electrode plate;

a ring surrounding the resilient electrode plate, accommodating the battery therein and electrically connected to the negative contact of the printed circuit board; and

a battery cap fastened to and electrically connecting with the ring, the battery cap covering a top of the ring, the battery having a cathode electrically connecting with battery cap.

[Claim 2] 2. The battery holder of claim 1, wherein the resilient electrode plate and ring are soldered to the positive and negative contacts of the printed circuit board by surface mount technology (SMT).

[Claim 3] 3. The battery holder of claim 2, wherein the resilient electrode plate comprises a feet soldered to the positive contact of the printed circuit board, and a flexible arm extending upwardly and engaging with the anode of the battery.

[Claim 4] 4. The battery holder of claim 1, wherein the battery cap engages an outer periphery of the ring.

[Claim 5] 5. The battery holder of claim 4, wherein the outer periphery of the ring defines a groove, and the battery cap has at least a protrusion engaging in groove.

[Claim 6] 6. The battery holder of claim 1, wherein the battery has an insulation between the anode and cathode thereof, and a step defined on the cathode beside the insulation, the battery cap having a step fittingly covering the step of the battery.

[Claim 7] 7. The battery holder of claim 6, wherein the battery cap has a spring tab extending toward a center thereof, the spring tab electrically engaging with the cathode of the battery.

[Claim 8] 8. The battery holder of claim 7, wherein the spring tab has a downward protrusion electrically engaging with the cathode of the battery.

[Claim 9] 9. A battery holder assembly comprising:

a battery having an anode and a cathode;
a printed circuit board having a positive contact and a negative contact;
a resilient electrode plate soldered to the positive contact of the printed circuit board, wherein the battery is placed on top of the resilient electrode plate and the anode of the battery is electrically connected to the positive contact via the resilient electrode plate;
a ring soldered to the negative contact of the printed circuit board, surrounding the battery and the resilient electrode plate; and
a battery cap fastened to top of the ring and the battery and electrically connected to the cathode of the battery and the ring.

[Claim 10] 10. The battery holder assembly of claim 9, wherein the battery cap has a top portion and a flanged portion extending downwardly from an edge of the top portion, the top portion defining a step fittingly covering a step of the cathode of the battery.

[Claim 11] 11. The battery holder assembly of claim 10, wherein the ring has a circular groove and the battery cap has a protrusion engaging in the circular groove and electrically connecting with the ring.

[Claim 12] 12. The battery holder assembly of claim 11, wherein the resilient electrode plate has alternately positioned flexible arms and soldering feet, the soldering feet being soldered to the positive contact of the printed circuit board, and the arms being upwardly

extended away from the printed circuit board and electrically engaging with the anode of the battery.

[Claim 13] 13. The battery holder assembly of claim 12, wherein the battery cap further comprises at least a spring tab extending toward a center of the top portion of the battery cap, the at least a spring tab having a downward protrusion electrically contacting with the cathode of the battery.

[Claim 14] 14. The battery holder assembly of claim 13, wherein the battery has an insulation between the cathode and anode, and the step of the cathode of the battery is located beside the insulation.

[Claim 15] 15. The battery holder assembly of claim 14, wherein the protrusion of the battery cap engaging in the circular groove of the ring is formed on the flanged portion of the battery cap.

[Claim 16] 16. The battery holder assembly of claim 15, wherein the resilient electrode plate and the ring are soldered to the printed circuit board by surface mount technology.

[Claim 17] 17. A battery holder assembly comprising:

a printed circuit board;

a resilient electrode plate soldered to the printed circuit board;

a ring soldered to the printed circuit board and surrounding the resilient electrode plate;

a battery accommodated in the ring and electrically connecting with the resilient electrode plate; and

a battery cap covering the battery, fastened to and electrically connecting with the ring, and electrically connecting with the battery.

[Claim 18] 18. The battery holder assembly of claim 17, wherein the battery has an anode electrically connecting with the resilient electrode plate, and a cathode electrically connecting with the battery cap.

[Claim 19] 19. The battery holder assembly of claim 18, wherein the battery cap has a step fitting covering the cathode of the battery.

[Claim 20] 20. The battery holder assembly of claim 19, wherein the battery cap has a top portion having a spring tab electrically engaging with the cathode of the battery, and a flanged portion downwardly extending from the top portion and electrically engaging with the ring.